

Notice of Allowability

Application No.

10/729,801

Examiner

David M. Brunzman

Applicant(s)

VENIGALLA ET AL.

Art Unit

1755

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the attached examiner's amendment.
2. ☒ The allowed claim(s) is/are 33-57.
3. ☒ The drawings filed on 04 December 2003 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date 20031204 12040303 JS
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

Art Unit: 1755

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

The application has been amended as follows:

Cancel claims 1-32.

Amend claims 37-39, 41, 44 and 45 as follows:

37. (Currently Amended) The composition of claim 33, wherein the alkaline earth metal is an alkaline earth metal from the group consisting of barium and calcium.

38. (Currently Amended) The composition of claim 33, wherein the alkaline earth metal silicate-based sintering aid has the formula [coating comprises] $\text{Ba}_x\text{Ca}_{1-x}\text{SiO}_3$, wherein $0 < x < 1$.

39. (Currently Amended) The composition of claim [34] 38, wherein x is between about 0.4 and about 0.6.

41. (Currently Amended) A barium titanate-based composition comprising a mixture of [:] barium titanate-based particles [;] and alkaline earth metal silicate-based particles having an average particle size of less than about 500 nm.

44. (Currently Amended) A multilayer ceramic capacitor comprising:

an electrode layer; and

a dielectric layer formed on the electrode layer, the dielectric layer comprising sintered barium titanate-based particles coated with an alkaline earth metal silicate-based sintering aid.

45. (Currently Amended) A multilayer ceramic capacitor comprising:

an electrode layer; and

Art Unit: 1755

a dielectric layer formed on the electrode layer, the dielectric layer comprising a mixture of sintered barium titanate-based particles and sintered alkaline earth metal silicate-based particles having an average particle size of less than about 500 nm.

Add new claims 46-57 as follows:

46. (New) The composition of claim 33, wherein the barium titanate-based particles are coated with at least one dopant compound.

47. (New) The composition of claim 46, wherein the at least one dopant compound comprises a metal selected from the group consisting of lithium, magnesium, strontium, scandium, zirconium, hafnium, vanadium, niobium, tantalum, manganese, cobalt, nickel, zinc, boron, antimony, tin, yttrium, lanthanum, lead, bismuth and a Lanthanide element.

48. (New) The composition of claim 33, wherein the barium titanate-based particles are coated with magnesium, manganese and yttrium.

49. (New) The composition of claim 33, wherein the alkaline earth metal silicate-based sintering aid is barium silicate.

50. (New) The composition of claim 33, wherein the barium titanate-based particles are coated with an alkaline earth metal silicate based coating layer and at least one layer that comprises a dopant metal.

51. (New) The composition of claim 33, wherein the barium titanate-based particles are barium titanate particles.

52. (New) The composition of claim 41, wherein the barium titanate-based particles are coated with at least one dopant metal compound.

53. (New) The composition of claim 52, wherein the at least one dopant compound comprises a metal selected from the group consisting of lithium, magnesium, strontium,

Art Unit: 1755

scandium, zirconium, hafnium, vanadium, niobium, tantalum, manganese, cobalt, nickel, zinc, boron, antimony, tin, yttrium, lanthanum, lead, bismuth and a Lanthanide element.

54. (New) The composition of claim 52, wherein the barium titanate-based particles are coated with magnesium, manganese and yttrium.

55. (New) The composition of claim 41, wherein the alkaline earth metal silicate-based particles are barium silicate particles.

56. (New) The composition of claim 41, wherein the alkaline earth metal silicate-based particles are barium calcium silicate particles.

57. (New) The composition of claim 41, wherein the barium titanate-based particles are barium titanate particles.

Applicant's submission of an identical amendment, not entered due to non-compliance with 37 CFR 1.121, is construed as approval for the above examiner's amendment to place the application in condition for allowance.

The following is an examiner's statement of reasons for allowance: The prior art, as represented by WO 98/35920 and US Patent 5,335,139, neither alone, nor in combination, teach or make obvious the claimed compositions which comprise (1) barium-titanate-based particles coated with an alkaline earth metal silicate-based sintering aid; or (2) a mixture of barium titanate-based particles and alkaline earth metal silicate-based particles having an average particle size of less than about 500nm. US 4925817 is representative of the prior art discussed at page 2, lines 11-18 of the instant specification. Figure 5 and the accompanying disclosure, demonstrates unexpectedly better results when using the sub 500 nanometer sintering aid or sintering aid coat (see figure 8, etc.) as compared to the prior art. The mixed powders of the prior art are not construed as reading on barium titanate

Art Unit: 1755

coated with an alkaline metal based sintering aid. The use of the term barium titanate-based is found to have a definite art recognized meaning and be in compliance with 35 U.S.C. 112(2) as established in the parent application.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David M. Brunsman whose telephone number is 571-272-1365. The examiner can normally be reached on M, W, F, Sa; 6:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo can be reached on 571-272-1362. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

David M Brunsman
Primary Examiner
Art Unit 1755

DMB

